

IN THE CLAIMS

Please amend the claims as follows:

1. (Currently Amended) Photo-sensitive element for electro-optical sensors, comprising at least:

a photo-sensitive reception means,

a current conversion circuit to convert the current generated by said photo-sensitive reception means into a ~~tension~~ voltage signal at a photosensitive node, and

an amplification and reading circuit,

wherein said current conversion circuit comprises at least a P-channel first transistor able to be used as an ideal ~~key~~ switch and to be ~~piloted with~~ driven by a ~~tension~~ voltage which is variable between a high ~~feed-tension~~ voltage and a low ~~feed-tension~~ voltage, said photo-sensitive element being able to be taken to a reset state if the ~~pilot-tension~~ driving voltage of said transistor is low, and to an integration state if said ~~pilot-tension~~ driving voltage is high,

wherein said current conversion circuit comprises at least two transistors, said at least two transistors comprising said first P-channel type transistor and at least a second N-channel type transistor, said first and second transistors having one between their source or drain terminal in common with each other and connected to said photosensitive node and their gate terminals able to be driven externally by means of a voltage of a variable value to selectively allow either a linear conversion or a logarithmic conversion of said current photo-generated by said reception means, and

wherein said second N-channel type transistor is able to represent an active load.

2. (Cancelled).

3. (Cancelled).

4. (Currently Amended) Photo-sensitive element as in claim 2 1, wherein the number of second N-type N-channel type transistors is variable from 1 to 12, in order to increase by a corresponding ~~value~~ factor the logarithmic conversion gain of said current photo-generated by said photo-sensitive reception means.

5. (Previously presented) Photo-sensitive element as in claim 1, wherein said amplification and reading circuit comprises at least a third transistor suitable to make a first amplification of the signal and a fourth transistor to connect the photo-sensitive element to a signal transmission line.

6. (Currently Amended) Photo-sensitive element as in claim 3 5, wherein said photo-sensitive reception means consists of an inversely polarized N-type diode,

~~wherein said current conversion circuit comprises at least said first transistor and at least a second transistor, wherein said amplification and reading circuit comprises at least a third transistor suitable to make a first amplification of the signal and a fourth transistor to connect the photo-sensitive element to a signal transmission line;~~

~~the second, the third and the fourth transistor are of the N-channel type and the first transistor (21) is of the P-channel type.~~

7. (Cancelled).

8. (Currently Amended) Photo-sensitive element as in claim 15 [[5]], wherein said fourth transistor is able to be selectively enabled to allow the signal relating to the photo-sensitive element selected to be read at any moment whatsoever.

9. (Currently Amended) Photo-sensitive element as in claim 1, wherein the photo sensitive element is able to detect the light of a wavelength of between 400 and 1000 nm and an intensity varying in ~~an interval~~ a range of at least 8 decades, between 10^{-5} and 10^3 W/m².

10. (Cancelled)

11. (Cancelled)

12. (Previously Presented) Photo-sensitive element as in claim 1, wherein the photo sensitive element it is able to be entirely integrated into a silicon substrate of limited size, to achieve a microchip.

13. (Previously Presented) Photo-sensitive element as in claim 1, wherein the photo sensitive element is able to constitute a cell of a linear or matrix multiple cell sensor.

14. (Previously presented) Photo-sensitive element as in claim 5, wherein said photo-sensitive reception means comprises an inversely polarized N-type diode, the second, the third and the fourth transistor are of the N-channel type and the first transistor is of the P-channel type.

15. (Currently Amended) Photo-sensitive element for electro-optical sensors, comprising at least:

a photo-sensitive reception means,

a current conversion circuit to convert the current generated by said photo-sensitive reception means into a ~~tension~~ voltage signal ~~at a photo-sensitive reception means into a voltage signal at a photosensitive node~~, and

an amplification and reading circuit,

wherein said current conversion circuit comprises at least an N-channel first transistor able to be used as an ideal switch and to be piloted with driven by a tension voltage which is variable between a high ~~feed-tension voltage~~ and a low ~~feed-tension voltage~~, said photo-sensitive element being able to be taken to a reset state if the ~~pilot-tension driving voltage~~ of said transistor is high low, and to an integration state if said ~~pilot-tension driving voltage~~ is low high,

wherein said current conversion circuit further comprises at least a P-channel second transistor,

said first and second transistors having one between the respective source or drain terminal in common with each other and connected to said photosensitive node, and their gate terminals able to be driven externally by means of a voltage of a variable value to selectively allow either a linear conversion or a logarithmic conversion of said current photo-generated by

said reception means, wherein said second P-channel transistor is able to represent an active load

~~wherein said amplification and reading circuit comprises at least a third transistor suitable to make a first amplification of the signal and a fourth transistor to connect the photo-sensitive element to a signal transmission line,~~

~~wherein said photo-sensitive reception means comprises an inversely polarized P-type diode, the second, the third and the fourth transistors are of the P-channel type.~~

16. (New) Photo-sensitive element as in claim 15, wherein said amplification and reading circuit comprises at least a third transistor suitable to make a first amplification of the signal and a fourth transistor to connect the photo-sensitive element to a signal transmission line.

17. (New) Photo-sensitive element as in claim 16, wherein said photo-sensitive reception means comprises an inversely polarized P-type diode, and the third and the fourth transistors are of the P-channel type.

18. (New) Photo-sensitive element as in claim 1, wherein the photo sensitive element it is able to be entirely integrated into a silicon substrate of limited size, to achieve a microchip.

19. (New) Photo-sensitive element as in claim 1, wherein the photo sensitive element is able to constitute a cell of a linear or matrix multiple cell sensor.